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(71) Applicant *(for all designated States except US)*: MINNESOTA MINING AND MANUFACTURING COMPANY [US/US]; 3M Center, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: LAURET, Richard [FR/FR]; 4, rue de Nanterre, F-92150 Suresnes (FR). DE LA FOUCHARDIERE, Bertrand [FR/FR]; 1, avenue de la Porte-d'Asnières, F-75017 Paris (FR).

(74) Agents: CHRISTOFF, James, D. et al.; Minnesota Mining and Manufacturing Company, Office of Intellectual Property Counsel, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).

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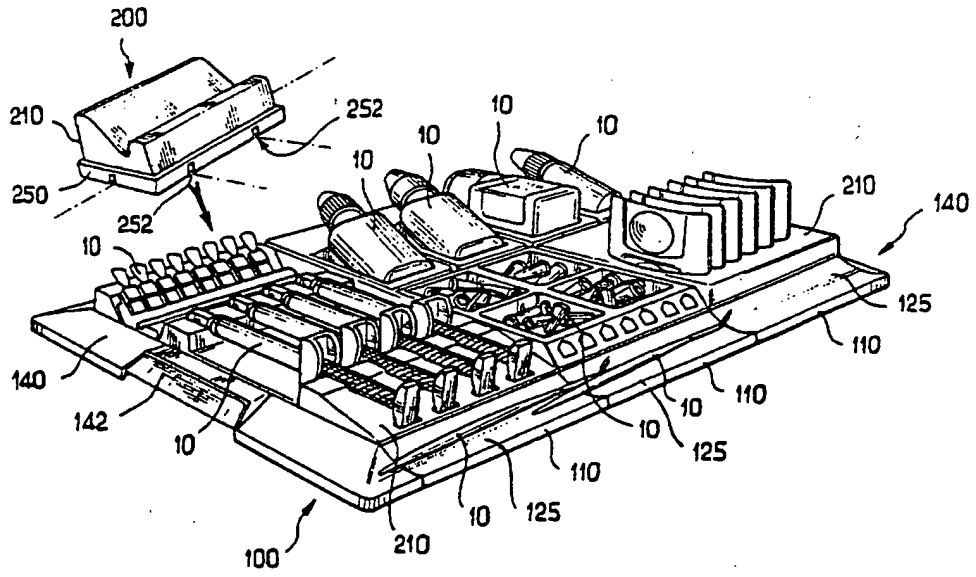

(57) Abstract

A display unit for accessories, especially for medical accessories, in particular dental accessories, the unit being characterized in that it comprises: a base (100) in form of a tray; and a set of modular supports designed both to be fixed selectively and in individually removable manner on the base (100) according to a plurality of configurations depending on the kind and the size of the accessories, and also to receive accessories (10).

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MODULAR TRAY FOR MEDICAL GEAR

The present invention relates to the field of display units for accessories.

More precisely, the present invention relates especially to the field of display units for medical accessories, for making the accessories available to practitioners at the point of use.

The present invention is particularly applicable to dentistry.

Numerous display units for medical accessories have already been proposed in the form of tables, stands, or the like, enabling various instruments or substances used in medical care to be placed together in such a manner as to be easily accessible to medical practitioners.

Known display units are generally in the form of trays having various recesses for receiving said medical accessories.

The document WO-A-93/02631 for example discloses a display unit for the dental field, comprising a box provided with a plurality of recesses or holes suitable to each receive a container containing an orthodontic appliance.

Nevertheless, conventional display units do not give complete satisfaction.

In particular, such known display units are difficult to adapt optimally to the furniture at the point of use. In addition, known display units are not always well adapted to the accessories used. Especially, it should be observed firstly that medical accessories change over time, and secondly that they change from one point of use to another as a function of the technique of each practitioner.

An object of the present invention is to propose a novel display unit that can be optimally adapted to

the medical accessories that each practitioner desires to use.

According to the present invention this object is achieved by a display unit for accessories, especially for medical accessories, in particular dental accessories, the unit being characterized in that it comprises:

a base in form of a tray; and

a set of modular supports designed both to be fixed selectively and in individually removable manner on the base according to a plurality of configurations depending of the kind and the size of the accessories, and also to receive accessories.

The use of a base that is in form of a tray serves in particular to make the base simple and inexpensive to fabricate. In addition, the use of supports that are modular makes it possible to use and to re-use the same base with a wide variety of configurations of different accessories.

According to an advantageous further characteristic of the invention, the base is formed by assembling modular section bars together, each of a width equal to one of the dimensions of the display unit.

This characteristic makes it possible for any person, and in particular any medical assistant, to assemble and adapt the base to dimensional constraints without requiring previous training.

In a preferred embodiment of the present invention, each section bar of the base is provided with longitudinal ribs projecting from its top surface and the modular supports are provided with a foam soleplate provided with at least one groove, and preferably with two orthogonal series of grooves, complementary to said ribs.

This characteristic makes it possible to assemble the various modular supports on the base in a manner

that is quick, simple, reliable, flexible, and removable.

Other characteristics, objects, and advantages of the present invention will appear upon reading the following detailed description given by way of non-limiting examples and made with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a display unit of the present invention in an installed position, and of an embodiment of a modular support;

Figure 2 shows a display unit of the present invention during assembly;

Figure 3 is an end view of a base section bar for a display unit of the present invention;

Figure 4 is a perspective view of a modular support in a first embodiment of the present invention;

Figure 5 is a plan view of a modular support in a second embodiment of the present invention;

Figure 6 is a section view of the same support on non-coplanar section planes referenced VI-VI in Figure 5;

Figure 7 is another section view of said support, on a plane referenced VII-VII of Figure 5;

Figure 8 is a plan view of a modular support in a third embodiment of the present invention;

Figure 9 is a side view of the same support in the third embodiment of the present invention;

Figure 10 is a section view through the same support on the section plane referenced X-X in Figure 8;

Figures 11, 12 and 13 are respectively a plan view, a section view on the section plane referenced XII-XII in figure 11 and a side view of a modular support in a fourth embodiment of the present invention;

Figures 14, 15 and 16 are respectively a plan view, a section view on the section plane referenced XV-XV in figure 14 and a side view of a modular support in a fifth embodiment of the present invention;

Figures 17 and 18 are respectively a plan view and a section view on the section plane referenced XVIII-XVIII in figure 17 of a modular support in a sixth embodiment of the present invention;

Figures 19, 20, 21 and 22 are respectively a plan view, a section view on the section plane referenced XX-XX in figure 19, a side view and a bottom view of a modular support in a seventh embodiment of the present invention; and

Figure 23 shows two orientations of a modular support on the base.

As mentioned above, the display unit of the present invention comprises:

a base 100 in form of a tray; and

a set of modular supports 200 designed both to be fixed selectively in removable manner on the base 100 according to a plurality of configurations depending of the kind and the size of the accessories and also to receive accessories 10, in particular medical accessories.

These medical accessories 10 may be constituted by any medical instrument, in particular hand-held instruments, or by any substance used in medical care. Consequently, they may be embodied in numerous different ways, and therefore they are not described per se below.

The base 100 is preferentially an assembly made up of longitudinally aligned section bars 110. The length and number of section bars 110 is a function of the desired size of the display unit.

The section bars 110 may, be made in various different ways, e.g. by extrusion, rolling, molding,

etc. When a continuous process is used, each bar 110 is cut to the desired length perpendicularly to the process direction. Thus, when seen from above, each bar 110 is rectangular in outline.

It should be observed that the width of the bars 110 is equal to one of the dimensions of the display unit. This disposition brings simple assembly within the reach of any non-specialized person, as mentioned above.

In the preferred embodiment shown in Figure 3, the bar 110 has a base wall 112 that is horizontal.

Its top face 114 is provided with rectilinear ribs 116 that are parallel and longitudinal. Thus, in the non-limiting example of Figure 3, four ribs 116 are provided on the base wall 112.

Although this characteristic is not limiting, it is preferable for the right cross-section of the ribs 116 to be rectangular.

The ribs 116 are preferably equidistant from one another, and the distance L1 (see figure 3) between two adjacent ribs 116 is equal to twice the distance L2 between the outer ribs 116 and the respective longitudinal edges 111 and 113 of the base wall 112. This disposition makes it possible to fit modular supports 200 in any selected position on the base 100.

In addition, the base wall 112 is provided along each of its longitudinal edges 111 and 113 with a respective vertical rim 118 or 122 projecting from the top face thereof, and itself provided at its top and on its outside with a respective structure 119 or 123. Each of these structures 119 and 123 defines a respective longitudinal channel 120 or 124. On their respective top surfaces 121 and 125 the structures 119 and 123 define respective recesses that are horizontal and upwardly-concave, e.g. in the form of cylindrical sectors, and that are suitable for receiving

instruments or the like, as can be seen in Figure 1, in particular.

The channels 120 and 124 are designed to receive complementary inserts 150 for fixing together two adjacent bars 110, e.g. as shown in Figure 2. The complementary sections of the channels 120 and 124 and of the inserts 150 may be designed in numerous different ways. They are therefore not described in greater detail herein. It should nevertheless be observed that the bars 110 may be locked together by the inserts 150 being glued in the channels 120 and 124, or merely by elastic deformation of the said inserts 150 when they are engaged in the channels 120 and 124 without being glued. To this end, in order to guarantee that the bars 110 are fixed together, it is preferable for the inserts 150 to be provided with serrated top surfaces 152, as shown in Figure 2.

Of course other means for fixing the bars 110 end to end may be provided.

For example, complementary means may be provided integral on the transverse faces of the structures 119, 123 or added on these faces. It may be an longitudinal shaft integral or added in relief on a transverse face of each structure 119, 123 and suitable to engage a complementary bore in the structure of an adjacent bar.

Furthermore the complementary means for fixing the bars may be engaged by simple translation movement in the direction of the bars or according to pivoting movement or a pivoting/translation movement.

According to an advantageous further characteristic of the invention, the wall of the base 112 is provided with anti-skid means on its bottom surface 130. They may be pads glued directly to the bottom surface 130. However, it is preferable for these anti-skid means to be in the form of strips 132 engaged in suitably-shaped grooves 134 formed in the

wall of the base 112 and opening out into the bottom surface 130 thereof. These grooves 134 may be formed in the ribs 116 as shown in Figure 2, or they may constitute additional structures, e.g. structures that project from the bottom surface 130 of the base wall 112, as shown in Figure 3. The edges of the grooves 134 preferably converge, e.g. to form a dovetail shape, thereby ensuring that the anti-skid strips 132 are automatically held in place.

The presence of anti-skid means 132 is particularly important when the display units are placed in drawers.

Finally, the base 100 preferably includes endpieces or trim 140 for fixing to the ends of the bars 110 of the base. The endpieces may likewise be embodied in numerous different ways. That is why they are not described in detail herein. Nevertheless, it should be observed that it is preferable for each endpiece 140 to include at least one portion 142 that is shaped to form a handgrip to facilitate handling of the display unit. In addition, the endpieces 140 may be fixed to the bars 110 in numerous different ways. The endpieces 140 are preferably fixed to the bars 110 by means of inserts 144 secured to the endpieces 140 and suitable for being engaged in the complementary channels 120 and 124.

Of course the base 100 may be made in various different ways. As example the base 100 may be molded in a one piece. In this case it is provided a plurality of sizes for the base so as to answer the request of each user.

The modular 100 can be adapted to fit a variety of drawers when it is used as a drawer organizer, or adapted to match the size of a tray support that is connected to the patient's chair when it is used as a setup tray for a particular patient.

Each of the various modular supports 200 comprises an upper portion 210 adapted to receive at least one accessory 10, and a lower portion 250 adapted to fix the support 200 to the base 100.

The upper portion 210 is advantageously made by thermoforming. It thus constitutes a shell that is suitably shaped for receiving various accessories 10.

In practice, practitioners are thus offered various different supports 200 adapted to the various different accessories that are available on the market.

Given the wide ranges of shapes that may be envisaged for the upper portions 210, they are not described in detail herein.

It is merely observed that, as shown in Figure 4, the upper portion 210 of the support 200 may be adapted to support a plurality of accessories 10.

The upper portion 210 shown in Figure 4 is intended for use in dentistry and is in the form of a wedge 212 designed to support firstly a mixing palette 214 and secondly a color guide 216 which are engaged against guiding and holding abutments 218. The wedge 212 may also be adapted to serve as a mixing well.

The upper portion 210 shown in Figures 5 to 7 defines various cells 220, 222, 224, and 226 for receiving various instruments or accessories, such as dental injection cartridges (the number of cells shown in the particular embodiment, i.e. four, being merely by way of example).

Figures 17 and 18 show another embodiment of support comprising a single cell 228 for example for brush tips.

Figures 8 to 10 and 11 to 13 respectively show two other supports 200 whose upper portion 210 defines three cells 230, 232, and 234 designed respectively to receive two flasks and a spoon for example for Vitremer brand or Vitrebond brand systems.

Figures 14 to 16 show another embodiment of support with a single cell 230 for receiving a flask, for example a vial flask, while figures 19 to 21 show another embodiment of support with three cells 230, 232, 234 for syringes.

The cells 230, 232 and 234 may be adapted to hold the flasks 10 horizontally, vertically, or sloping.

The lower portions 250 of the supports 200 shown in the accompanying drawings comprise soleplates of foam material onto which the associated upper portions 210 are glued. In addition, each foam soleplate 250 includes at least one groove 252, and preferably two orthogonal series of grooves 252, as that can be observed on figure 22, adapted to be engaged on the ribs 116. The pitch and the disposition of the grooves 252 matches the pitch and the disposition of the ribs 116. That is to say that the side grooves 252 are situated at the distance L2 from the edges of the soleplates. Thus, because of the intrinsic elasticity of the foam soleplates 250, the supports 200 are held on the base 100 merely by engaging the ribs 116, without any need for additional fixing means, and in a manner that is easily dismountable.

Naturally, the various supports 200 may have outlines that differ as a function of the accessories that they are designed to receive. The supports 200 are preferably rectangular in horizontal section. It is also preferable for the widths and the lengths of the soleplates 250 of the supports 200 to be multiples of the pitch L3 of the ribs 116 so that the supports can be placed in any position on the base 100. Similarly, the length and the width of the base wall 112 are preferably multiples of the pitch L3 of the ribs 116.

As shown on figure 23, the grooves 252 enable the modular supports 200 to be placed in a first orientation on the base 100, or optionally in a second

orientation that is rotated 90 degrees from the first orientation.

By way of example, the base 100 may be formed of a plastic material or of anodized aluminum.

As can be seen in Figure 2, each support 200 and its associated accessory(ies) 10 are preferably sold together in common packages 280, e.g. made of card. More precisely, it is preferable for each support 200 to be designed to support a kit comprising all of the instruments and substances necessary for performing a given function, e.g. for filling a tooth.

The display unit of the present invention is suitable for any medical field, and particularly, but not exclusively for dentistry. It may be used to present various accessories 10 in a standard manner regardless of the action to be taken, or the display unit may be adapted for each different type of action to be undertaken.

Where applicable, the display unit of the present invention may also include covering or trim modules 200 having no accessory support function, but serving to fill any empty spaces that may exist on the base 100.

The present invention is naturally not limited to the particular embodiment described above, but extends to any variants coming within the spirit of the invention.

CLAIMS:

1. A display unit for accessories characterized in that it comprises:

a base (100) including a number of modular, disconnectable section bars (110) that are assembled together; and

a set of modular supports (200) selectively fixed to said base (100), said supports (200) being individually removable from the base (100) and having a configuration for receiving an accessory (10).

2. A display unit according to claim 1, characterized in that each of the modular section bars (110) has a width equal to one of the dimensions of the display unit.

3. A display unit according to claim 1, characterized in that the modular section bars (110) have channels (120, 134), and inserts (150) are received in the channels (120, 124) to assemble the modular section bars (110) together.

4. A display unit according to claim 1, characterized in that the modular section bars (110) have transverse faces and are assembled together by means of complementary structures connected to adjacent pairs of transverse faces.

5. A display unit according to claim 1, characterized in that the base (100) has ends, and trim endpieces (140) are fixed to the ends of the base (100).

6. A display unit according to claim 5, characterized in that the trim endpieces (140) are shaped to form handgrips.

FIG.1

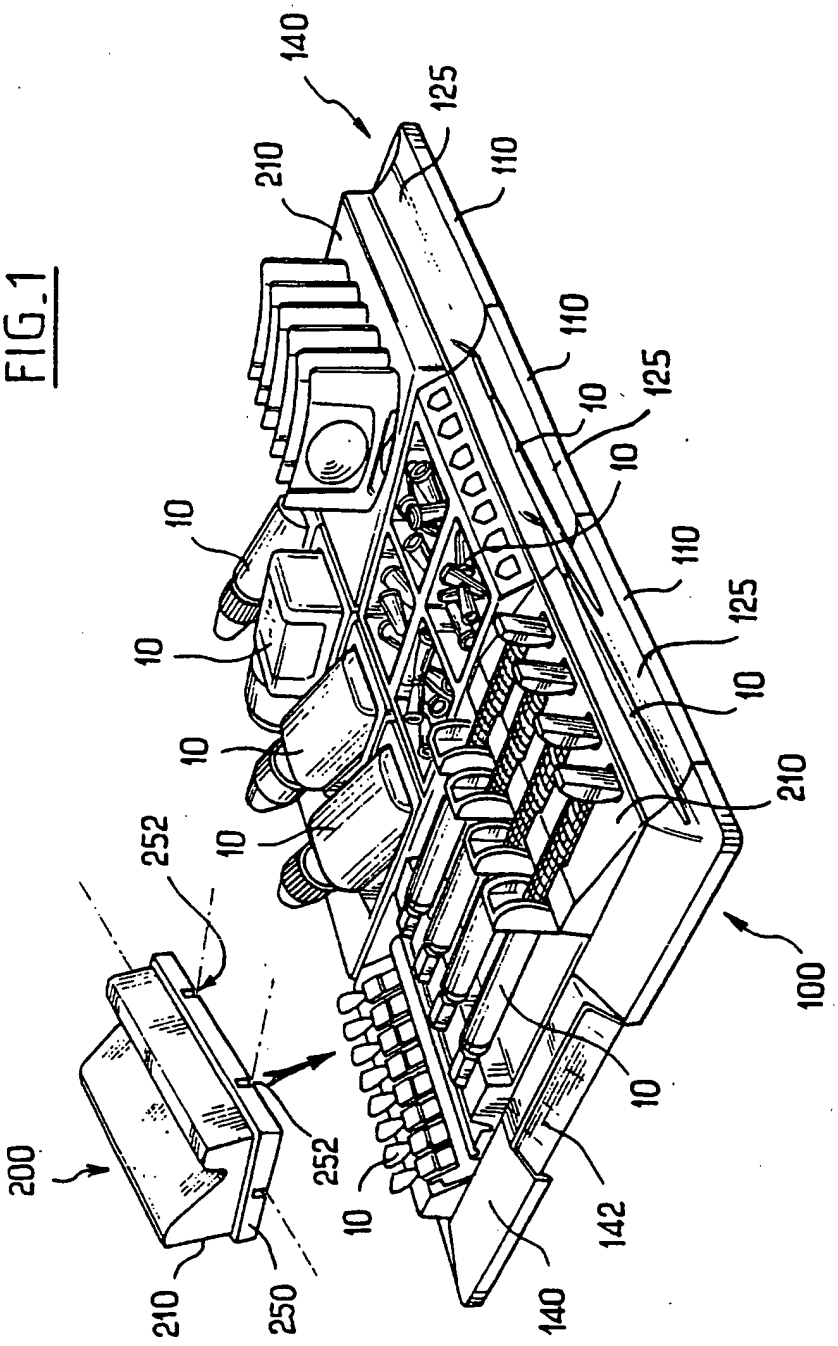
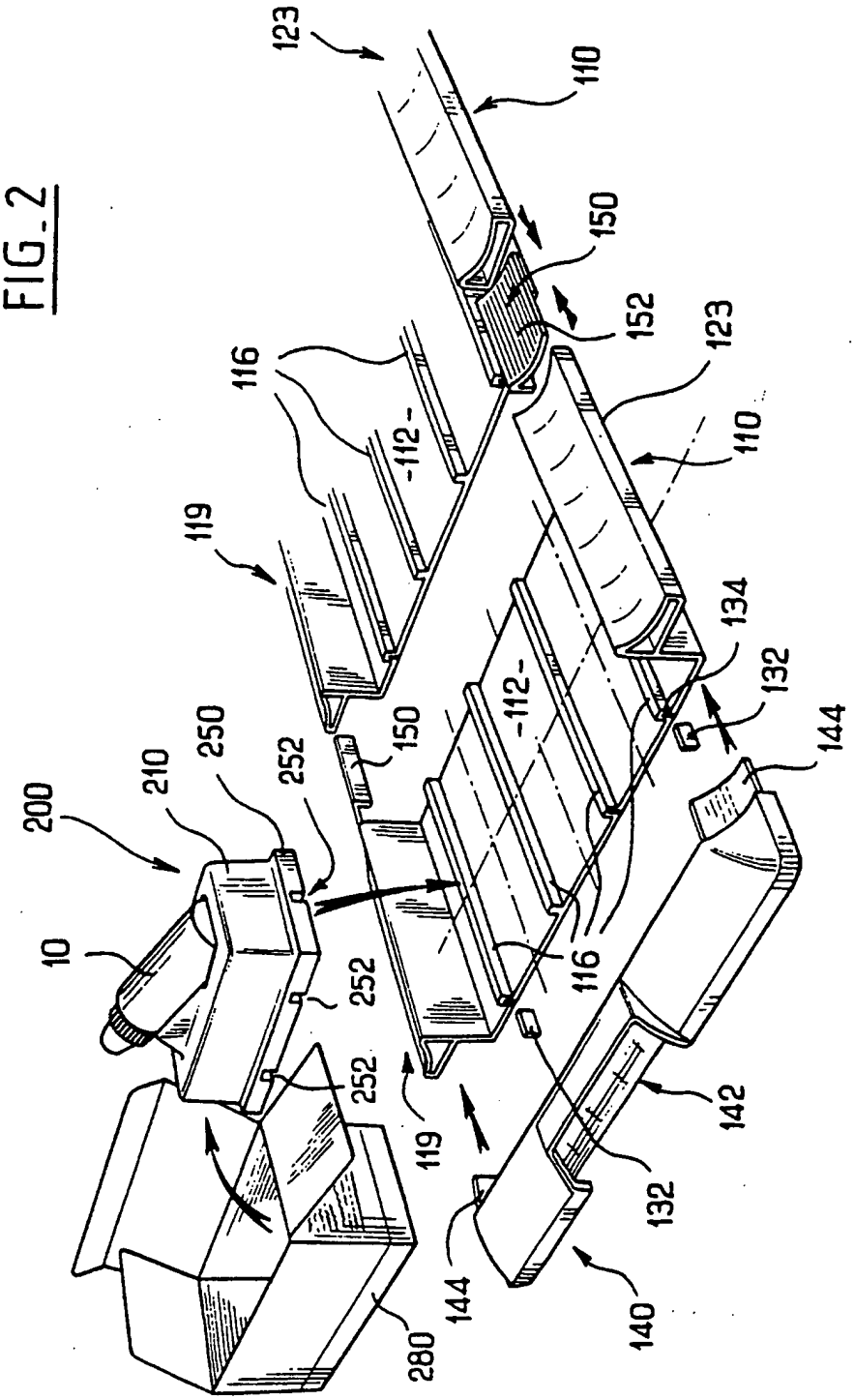

140
125
210
110
110
10
125
10
10
110
125
10
10
10
252
10
210
100
10
200
252
10
142
210
250
140

FIG_2


123
110
150
152
116
112
123
110
119
134
132
144
112
150
200
210
250
252
10
252
116
252
119
142
132
144
140
280

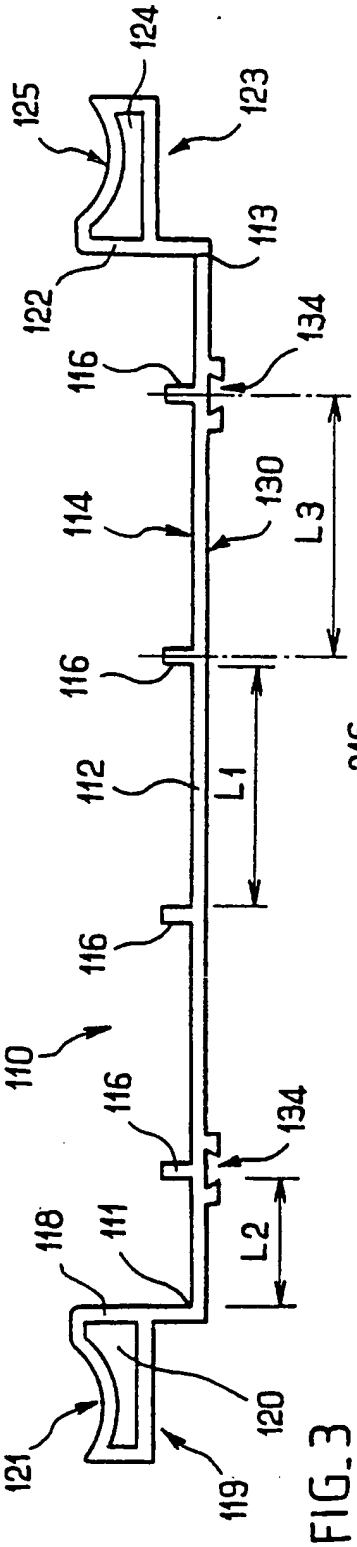

124
125
123
113
122
134
116
130
L3
114
116
112
L1
116
110
116
134
L2
118
111
120
121
119

FIG_3

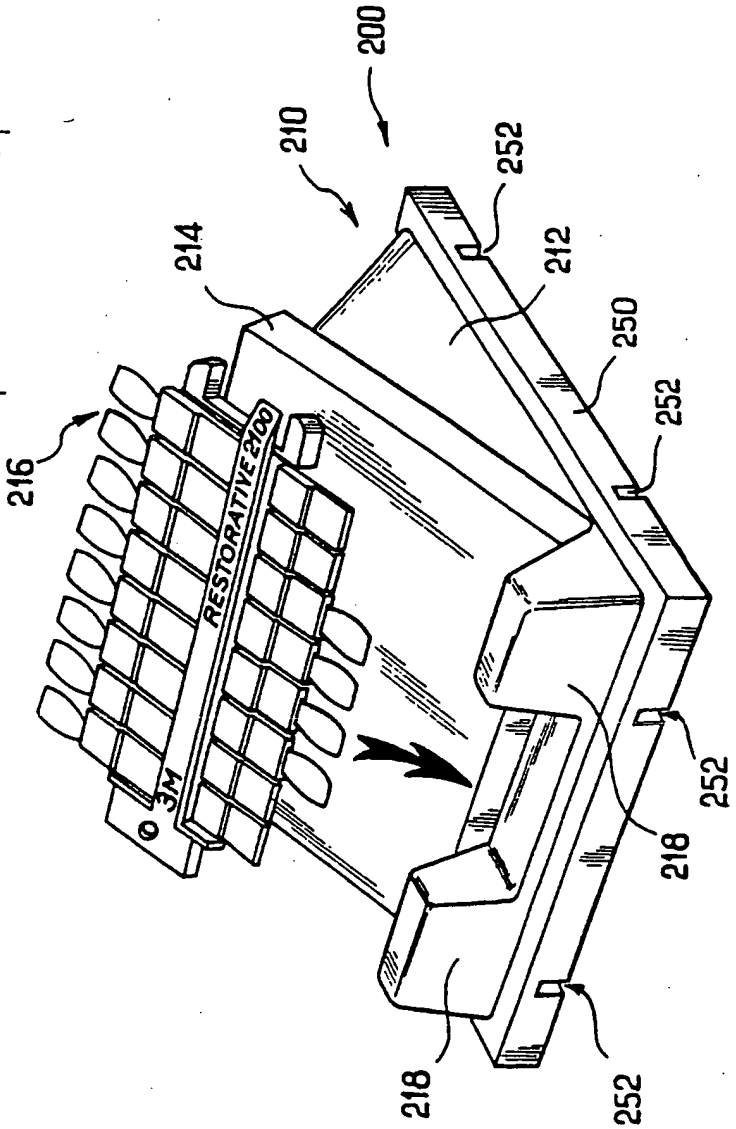

200
210
252
212
214
250
252
216
RESTORATIVE 200
3M
218
252
218
252

FIG_4

FIG_6

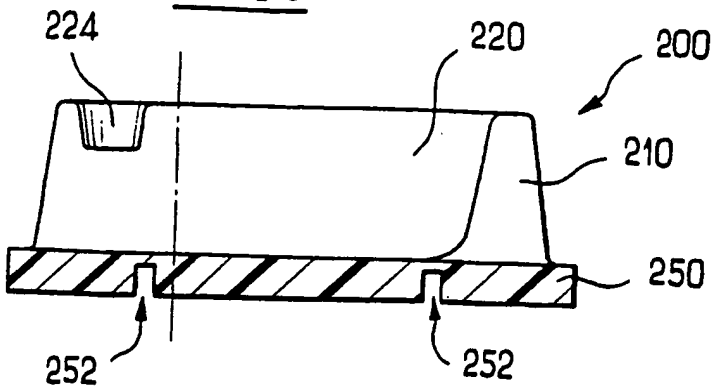


FIG_5

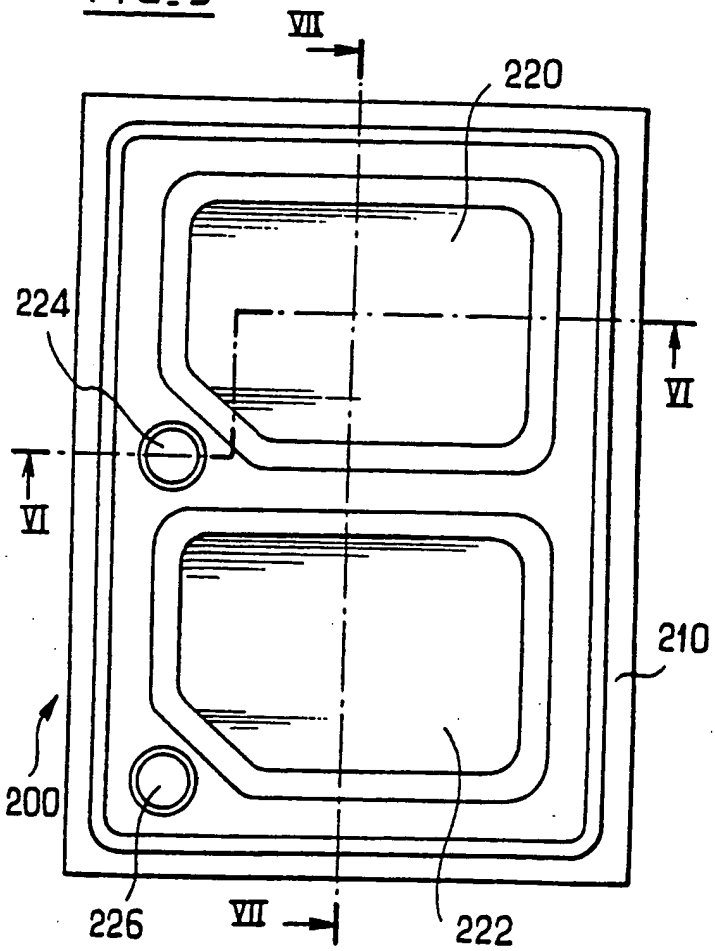


FIG_7

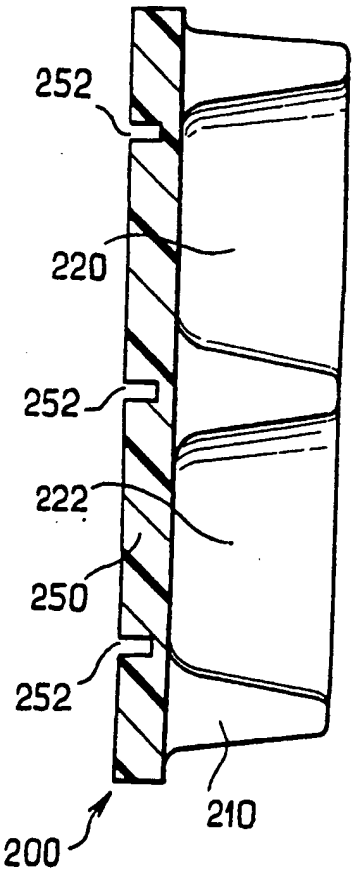
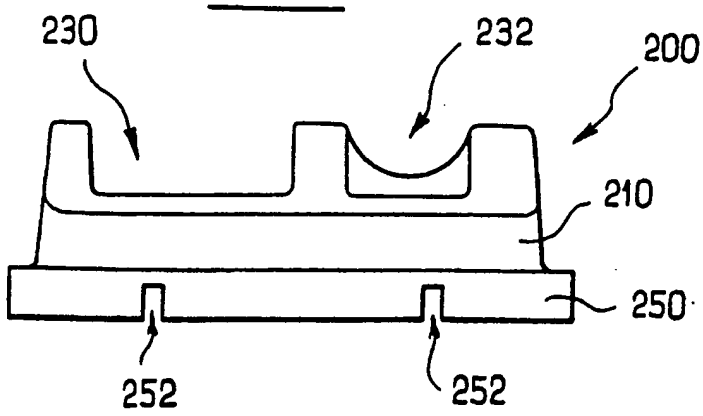


FIG_9



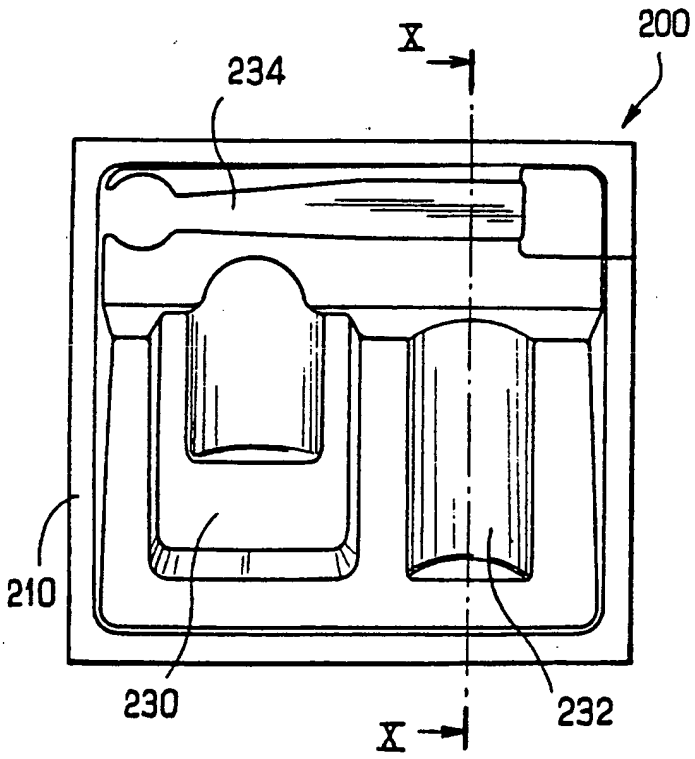


FIG_8

FIG_10

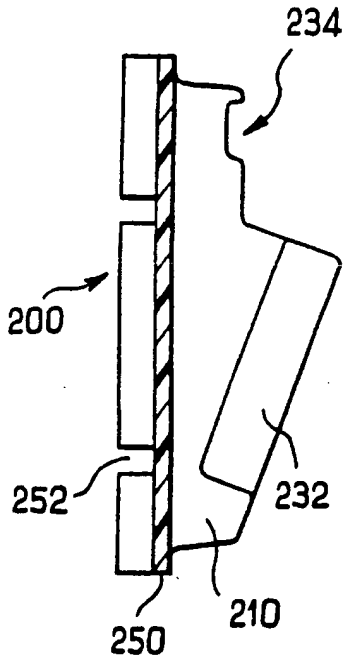


FIG_13

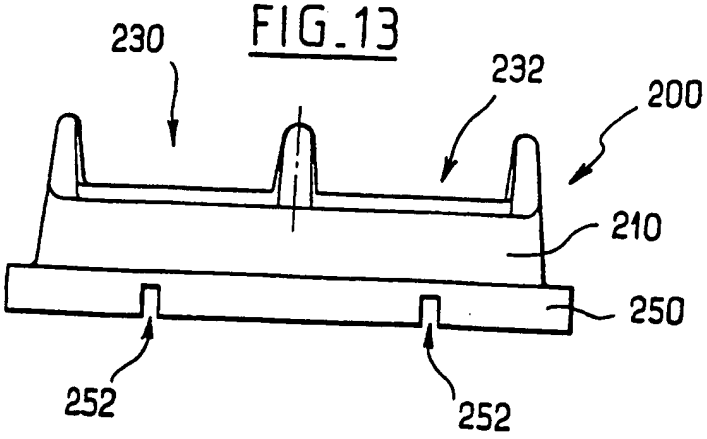


FIG_11

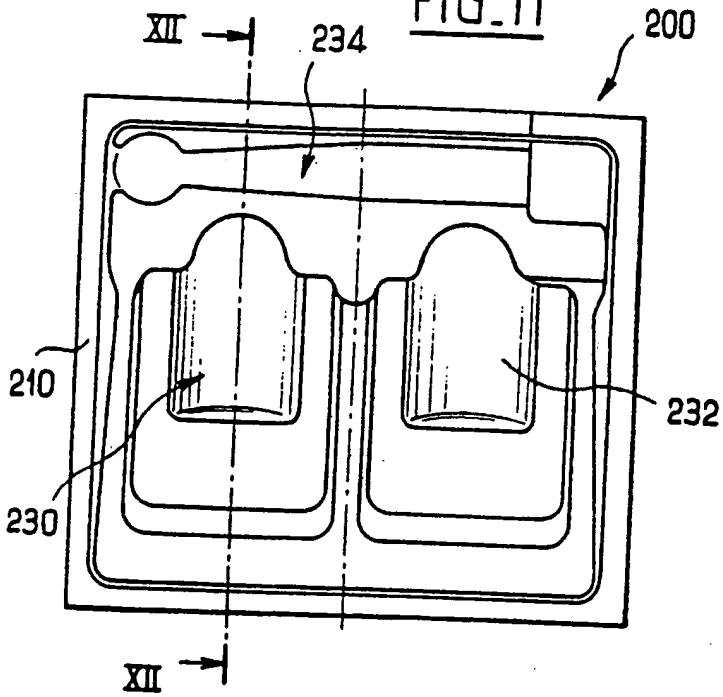


FIG_12

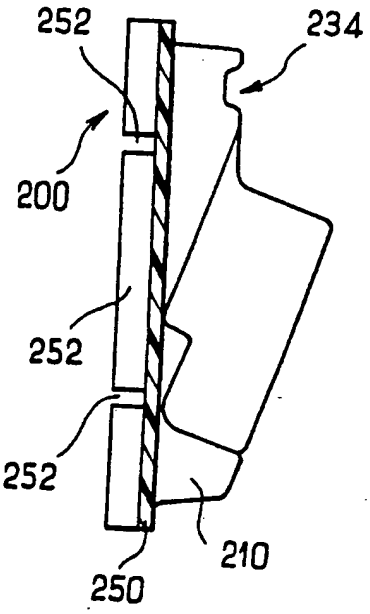


FIG_17

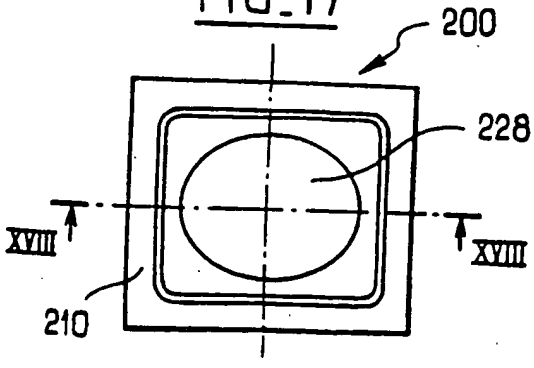


FIG_18

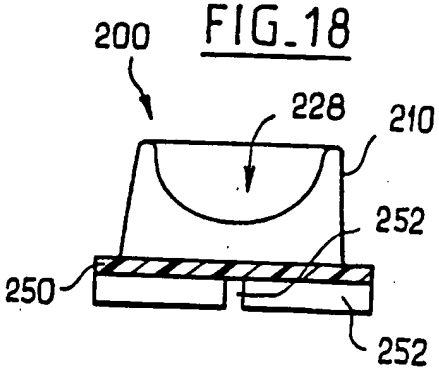


FIG_16

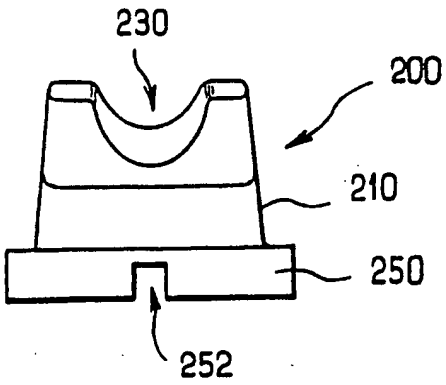


FIG_14

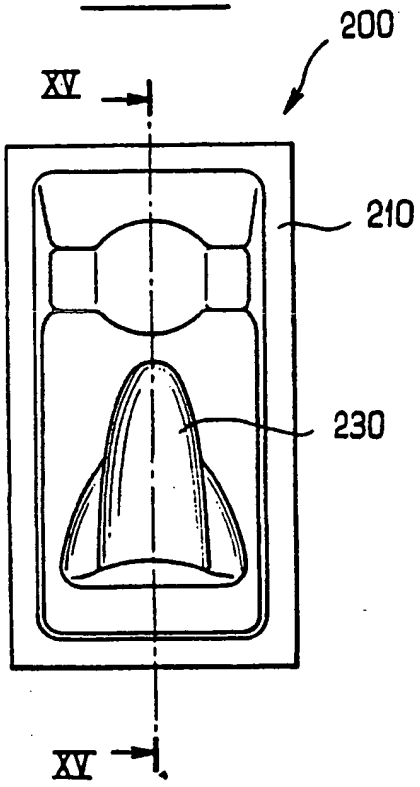
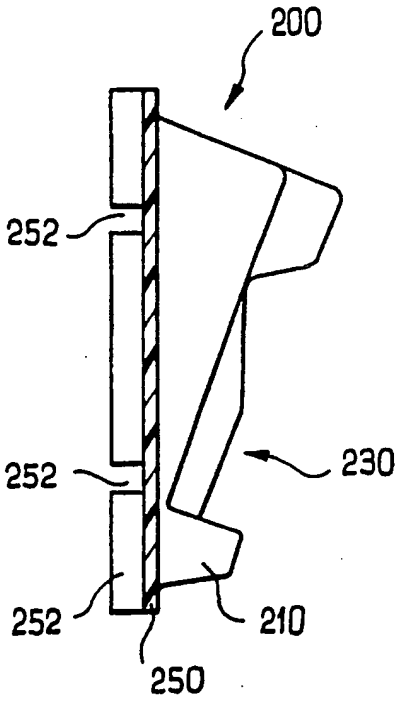


FIG_15



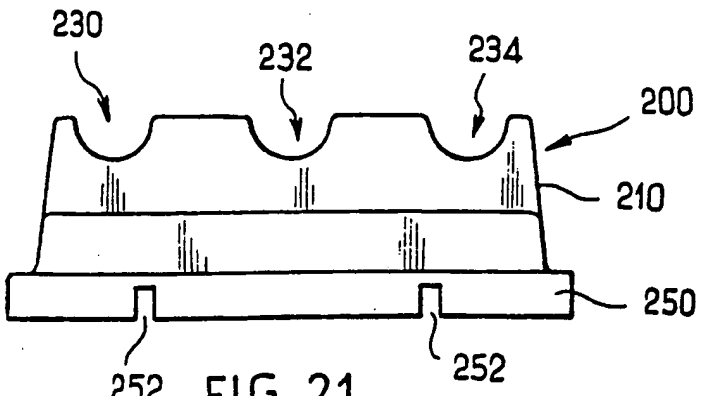


FIG_21

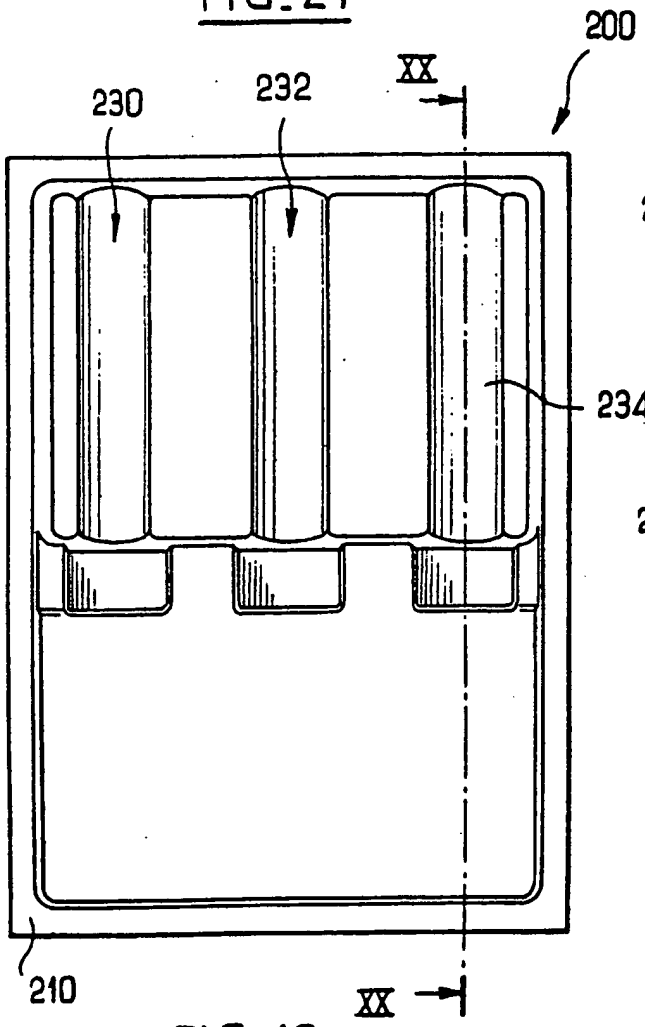


FIG_19

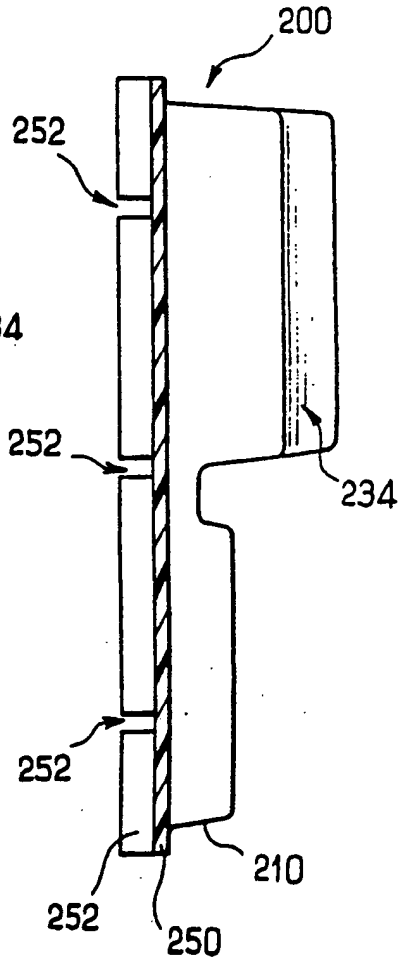


FIG_20

FIG. 22

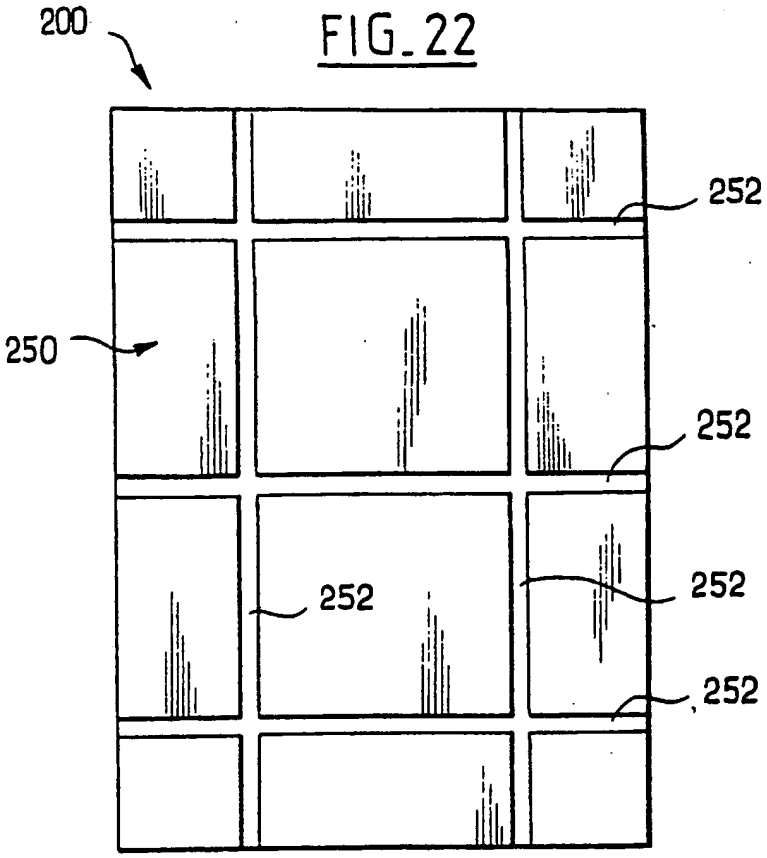
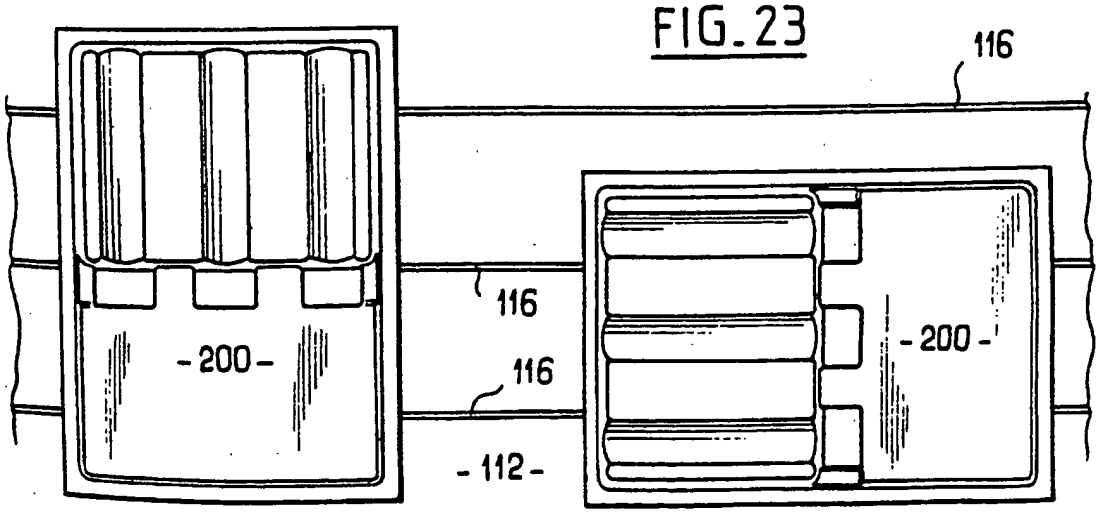


FIG. 23



INTERNATIONAL SEARCH REPORT

Inte onal Application No
PCT/US 94/10568

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61C19/02 A61B19/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61C A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE,A,41 22 045 (LEIBINGER) 7 January 1993 see abstract; figures 1,2	1
A	DE,A,28 20 272 (HINZ) 15 November 1979	
A	US,A,4 541 992 (JERGE) 17 September 1985	

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

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1

Date of the actual completion of the international search	Date of mailing of the international search report
26 January 1995	0 2. 02. 95

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016	Papone, F

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter ...nal Application No
PCT/US 94/10568

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A-4122045	07-01-93	NONE	
DE-A-2820272	15-11-79	NONE	
US-A-4541992	17-09-85	NONE	